Data sheet DS/L160–EN Rev. F

L160
Wall-/Pipe-Mount Level Indicator

L160 – the flexible level system that meets your needs

High visibility 5-digit LED display
— clear multi-functional indication

Analog and 2-relay outputs as standard
— high, low, latch and rate alarms, plus isolated retransmission

IP66 (NEMA 4X) enclosure
— designed for use in wet environments

Maths function included as standard
— SG correction, tank volume calculation, plus a 20-point linearizer

Max./Min. and Average levels
— as standard the L160 can store these values

Wide range of sensor inputs
— built-in 24V DC power supply

RS485/Modbus serial communications
— SCADA, PLC and open system integration

Power and productivity
for a better world™

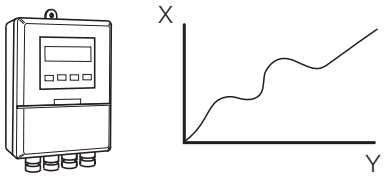
L160

The L160 Universal Wall-/Post-mount Level Indicator is a highly versatile unit, accepting inputs from a wide range of level sensors offered by ABB and third party suppliers.

As standard the L160 has a 5-digit indicator with IP66 all-round protection. It includes two alarm relays, 4 to 20mA retransmission, logic output, logic input and selectable maths function which can make corrections for SG or calculate tank volume calculation.

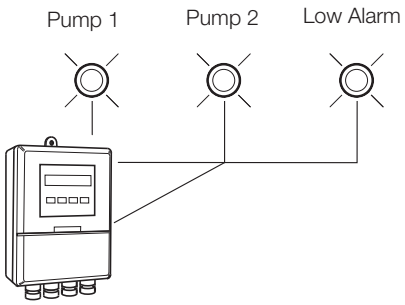
A 20-point linearizer is included for volumes in horizontal or dished-end tanks. There is also a feature to store the max./min./average values.

The RS485 Modbus serial communications option builds total system flexibility.



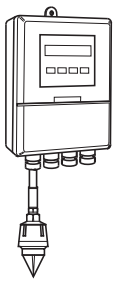
Custom Linearization

As standard the L160 has a 20-breakpoint linearizer suitable for volume calculation. (Factory setup using PC configurator).



Multiple Alarm Control Option

The L160 accommodates up to three relays to indicate a range of alarm states, i.e. pump control, with rate of change feature giving optimum pump utilization.



Maximum/Minimum Level Detection

As standard the L160 includes the ability to retain the highest and lowest level values. This is a particularly useful feature for unmanned sites, allowing a visiting operator to check quickly for abnormal levels.

Specification

Operation

Display

High-intensity, 7-segment, 1 x 5-digit LED display

Three alarm LED indicators

Display range	–9999 to +99999
Display resolution	±1 digit
Display height	14mm (0.56 in.)

Configuration

User-defined via front panel

Standard Functions

Alarms

Number	Three user-defined
Types	High/Low process High/Low latch Fast/Slow rate

Alarm hysteresis

0 to 100% of range

Math functions

Maximum and minimum value detection

Average level

SG correction

Tank volume calculation

20-breakpoint custom linearizer (factory configured)

Analog Inputs

Input type

1 to 10 mA, 4 to 20 mA or customize via PC Configurator

Input sampling rate

250ms

Accuracy

Indicator	0.2% of reading
Output	<0.2% of span

Sensor power supply

24V, 30mA max. powers one 2-wire transmitter
± 3V, 15mA (power for P851/P861 sensors)*

*Option board

Outputs – Standard Build

Retransmission

Analog, configurable in the range 4 to 20mA

Max. load	15V (750Ω at 20mA)
Isolation	500V DC from sensor input (not isolated from logic output)

Logic output

18V DC at 20mA

Min. load	400Ω
Isolation	500V from sensor input (not isolated from retransmission output)

Relay output

Two relays as standard (SPDT) 5A at 115/230V AC, 5A at 24V DC

Assignable to alarms

Options

One build can be selected from:

Type 01	Two relays + retransmission + logic output + digital input (Standard Build)
Type 02	Three relays + retransmission + logic output + digital input
Type 03	Two relays + retransmission + logic output + digital input + Modbus
Type 04	Two relays + logic output + retransmission + P851/P861 power supply

I/O

Relay output

SPDT 5A at 115/230V AC

Assignable to alarms

Digital input

Type	Volt-free
Minimum pulse	250ms

Modbus serial communications

Connections	RS422/RS485, 2- or 4-wire
Speed	2.4k or 9.6k baud rate
Protocol	Modbus RTU slave

Electrical

Voltage (supply)

85 to 265V AC 50/60Hz

24V DC optional

Power consumption

<6VA (85 to 265V AC)

<5W (24V DC)

Power interruption protection

<60ms/<3 cycles, no effect

>60ms/>3 cycles, instrument returns to operation after a controlled reset

Physical

Size

160mm wide x 250mm high x 68mm
(6.3 in. wide x 9.84in. high x 2.68 in.)

Weight

2kg (4.5 lb)

Environmental

Operating limits

–10 to 55°C (14 to 131°F)

5 to 95% RH non-condensing

Temperature stability

< 0.02% of reading or 2µV/°C (1µV/°F)

Enclosure

IP66 (NEMA 4X)

EMC

Emissions

Meets requirements of EN50081-2

Immunity

Meets requirements of EN50082-2

Design and manufacturing standards

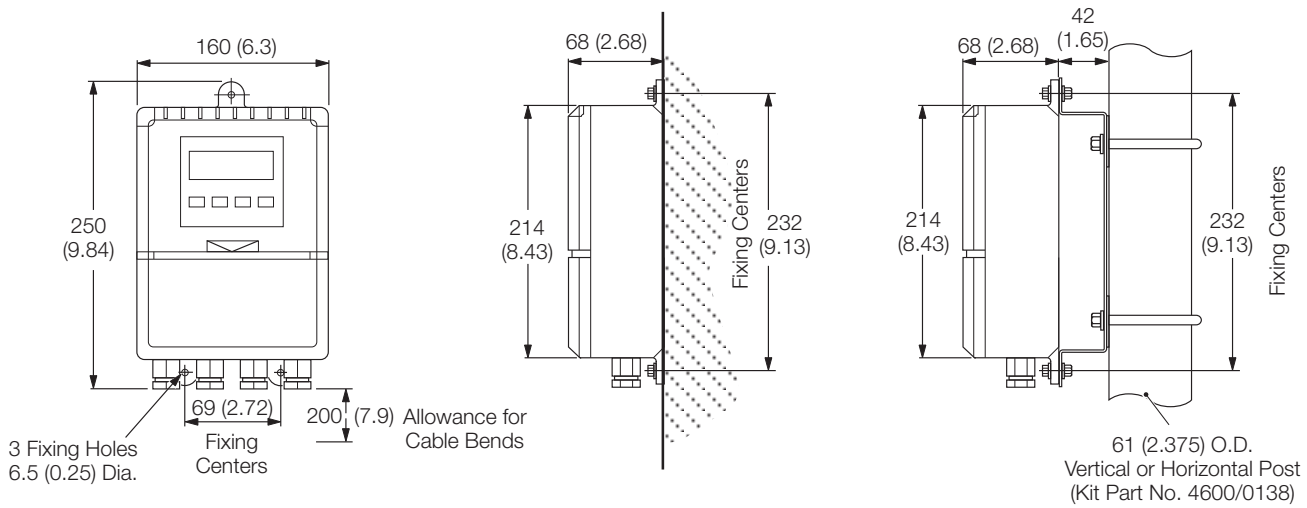
CE mark

Electrical safety

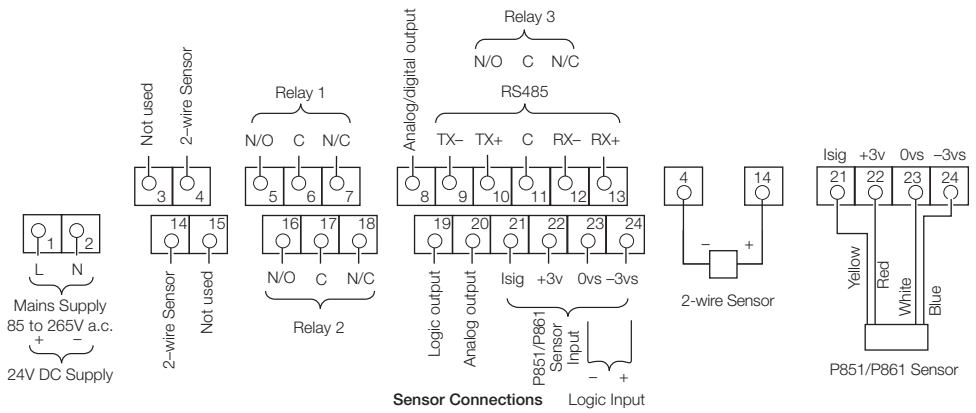
EN61010-1

Overall Dimensions

Dimensions in mm (in.)



Electrical Connections



Ordering Information

L160 Wall-/Pipe- Mount Level Indicator*	L160 /	X	X	X	X	/	X	X	X	X
Options										
2 relays + retransmission + logic output		0	1							
3 relays + retransmission + logic output + digital input		0	2							
2 relays + retransmission + logic output + digital input + Modbus		0	3							
2 relays + retransmission + logic output + P851/P861 power supply		0	4							
Power supply										
85V to 265V AC (M20)				0						
24V DC				1						
Build										
ABB Standard					0					
Programming/Special Features										
Configured to factory standard							S	T	D	
Configured to customer requirements							C	U	S	
Special features							S	P	X	X

* For pipe-mounting, order kit no. 4600/0138

Accessories

PC Configuration Kit (part no. C100/0700)

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